

Fig. 1

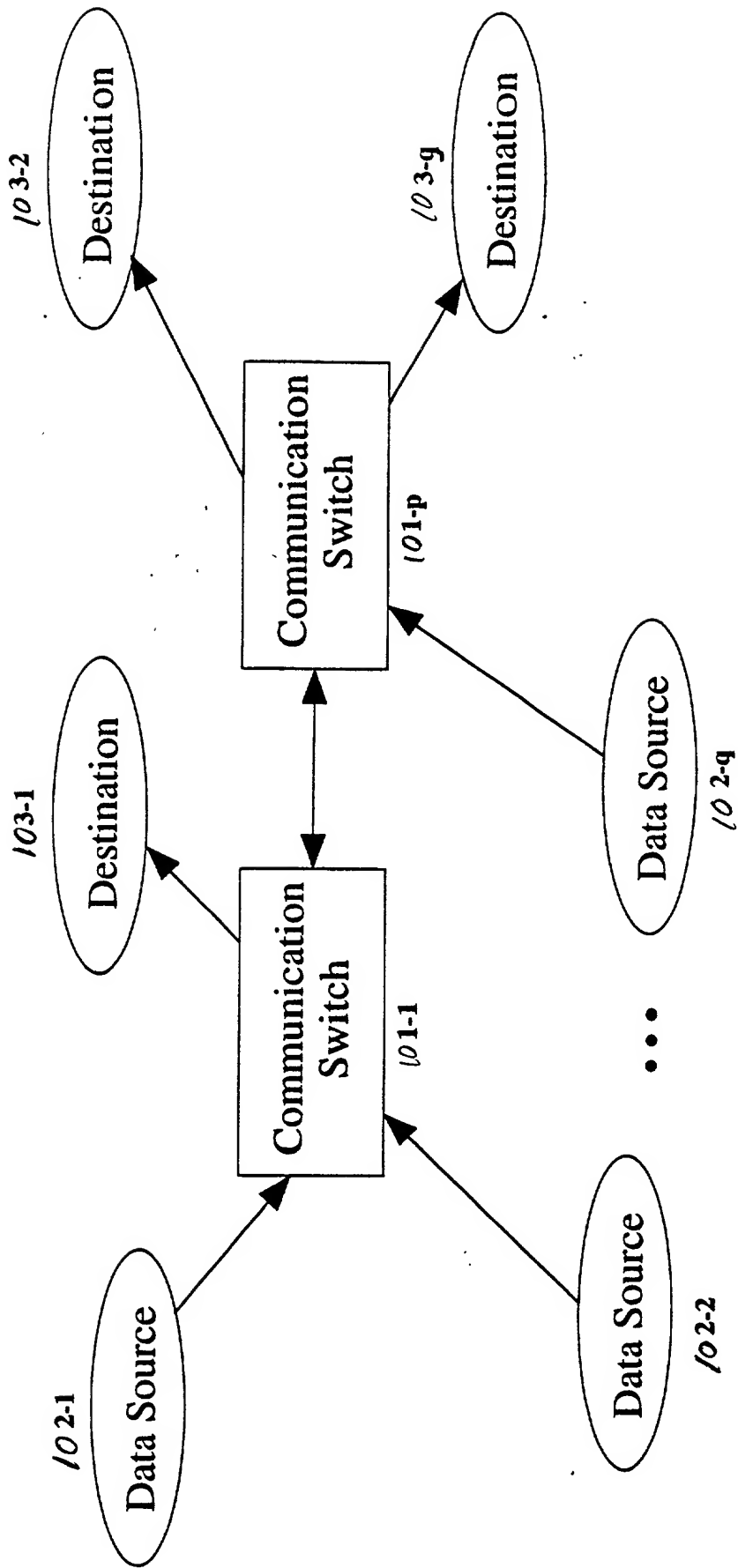
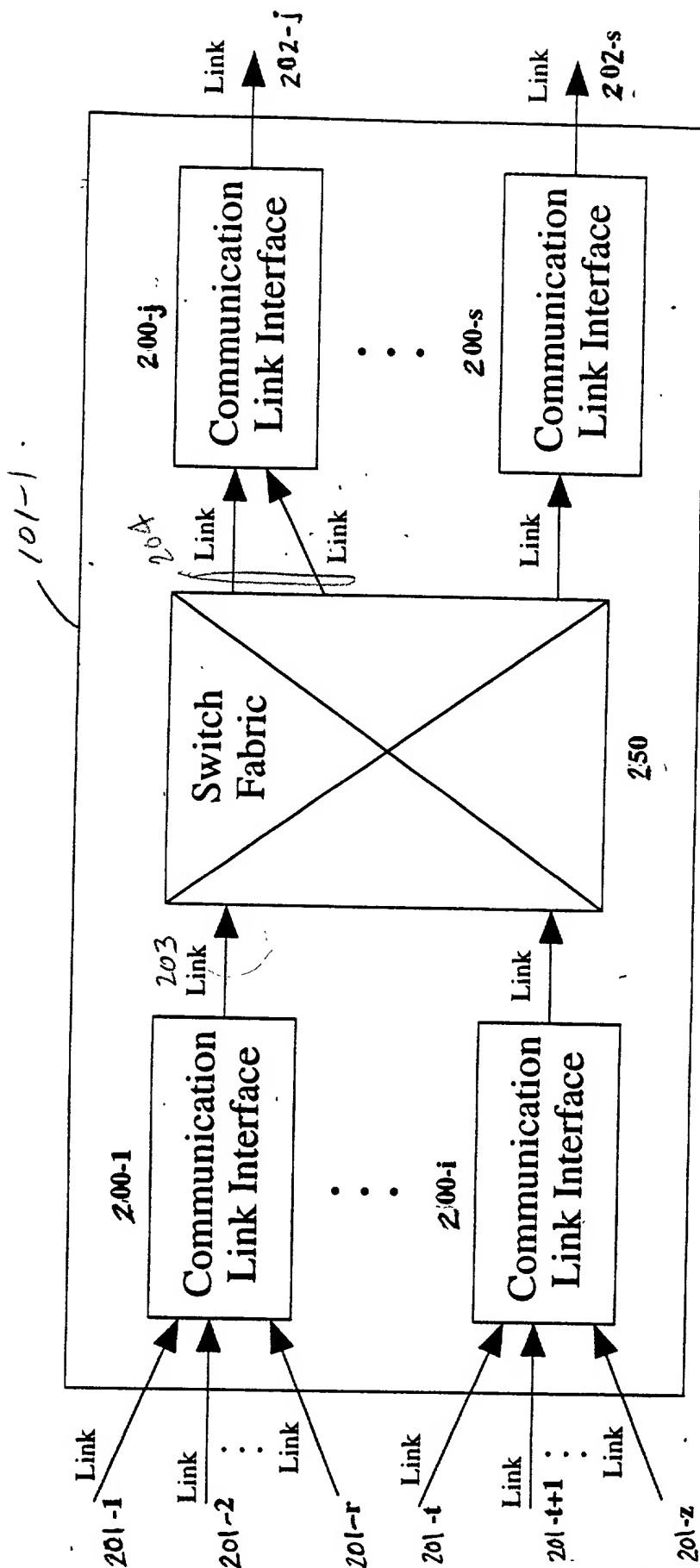


Fig. 2



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1  if (flow  $i$  is newly backlogged)
2       $F_i^k \leftarrow \frac{l_i^k}{\rho_i}$ 
3      Append  $i$  to the tail of the linked list
4  else /* A packet of  $i$  has just been transmitted */
5       $F_i^k \leftarrow F_i^{k-1} + \frac{l_i^k}{\rho_i}$ 
6      if ( $F_i^k \geq T_Q$ )
7           $F_i^k \leftarrow F_i^k - T_Q$ 
8          Conclude visit to flow  $i$ 
9      else
10         Keep servicing flow  $i$ 

```

Fig 3A

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1   $F_i^k \leftarrow F_i^{k-1} + \frac{l_i^k}{\rho_i}$ 
2  if ( $F_i^k \geq T_Q$ )
3       $F_i^k \leftarrow F_i^k - T_Q$ 
4      Conclude visit to flow  $i$ 
5  else if (flow  $i$  is still backlogged)
6      Keep servicing flow  $i$ 

```

Fig. 3B

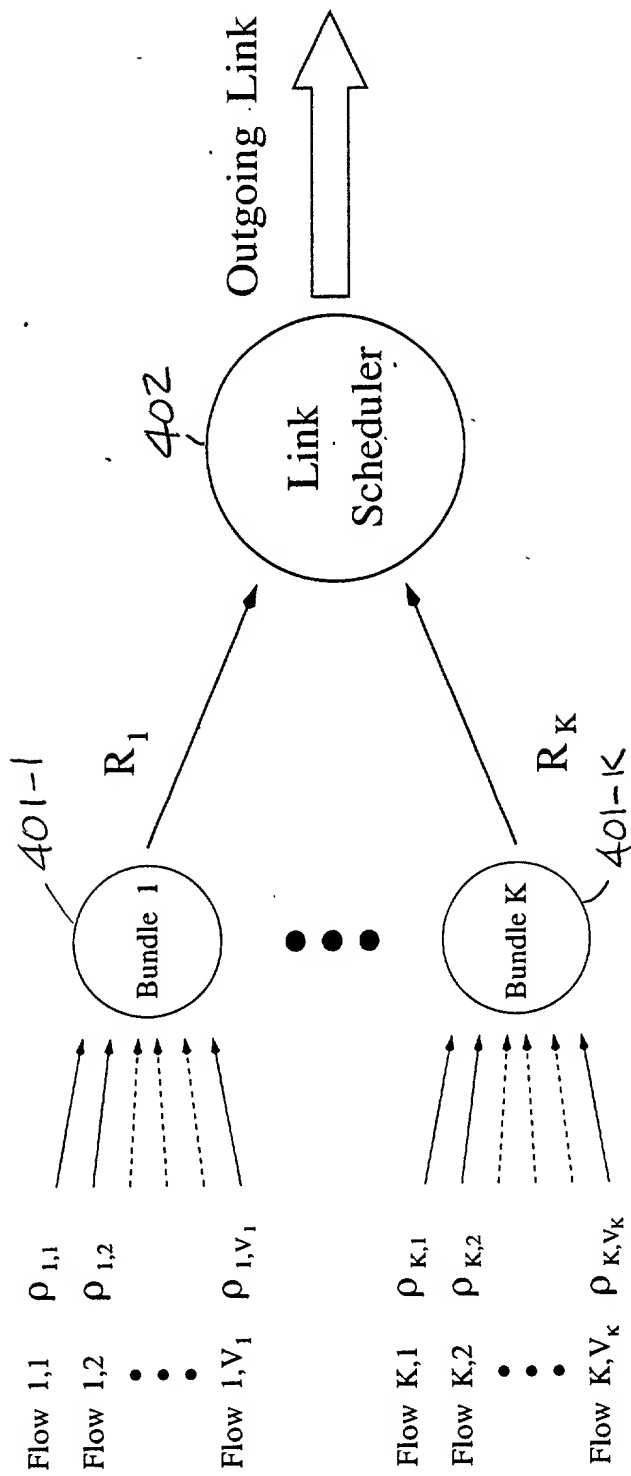


Fig. 4

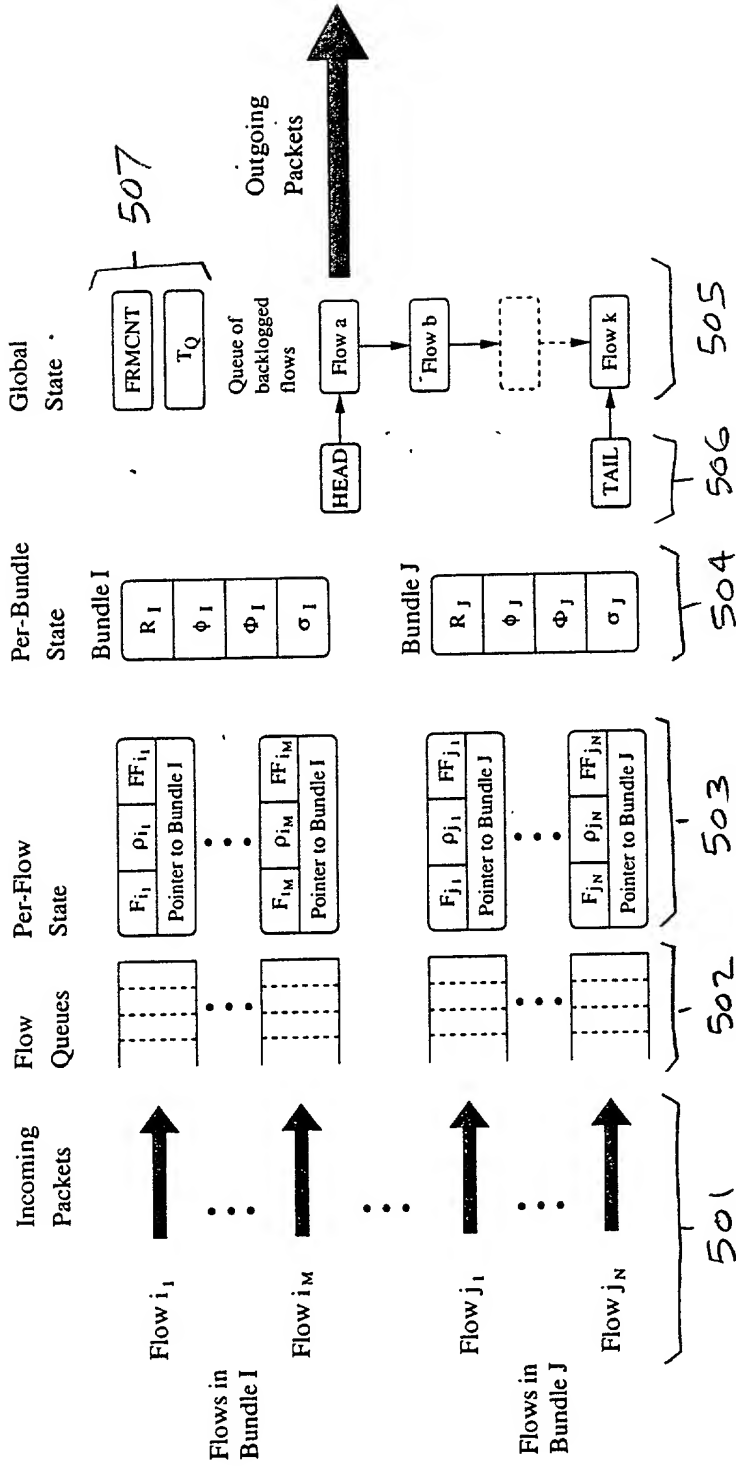
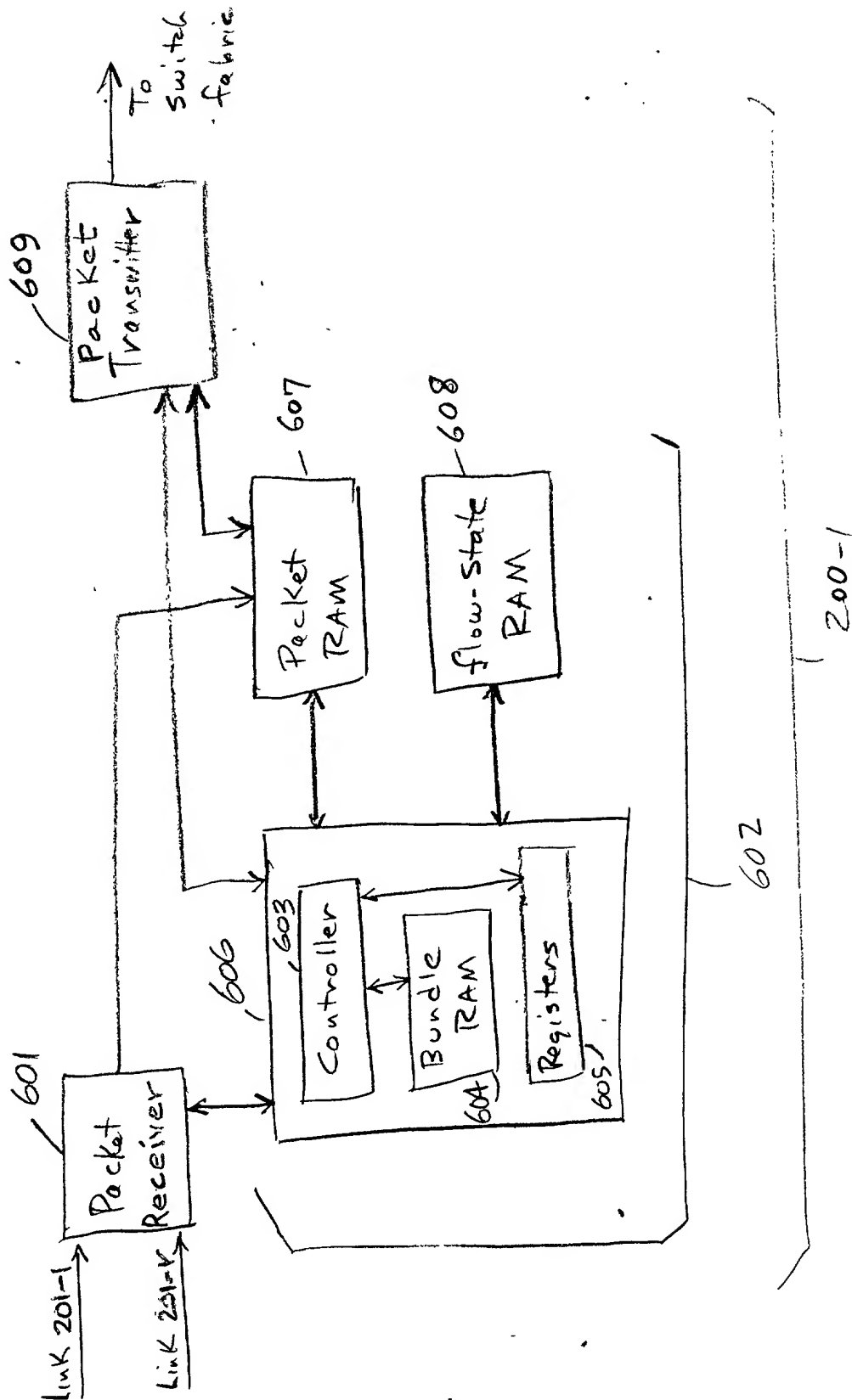


Fig. 5

Fig 6



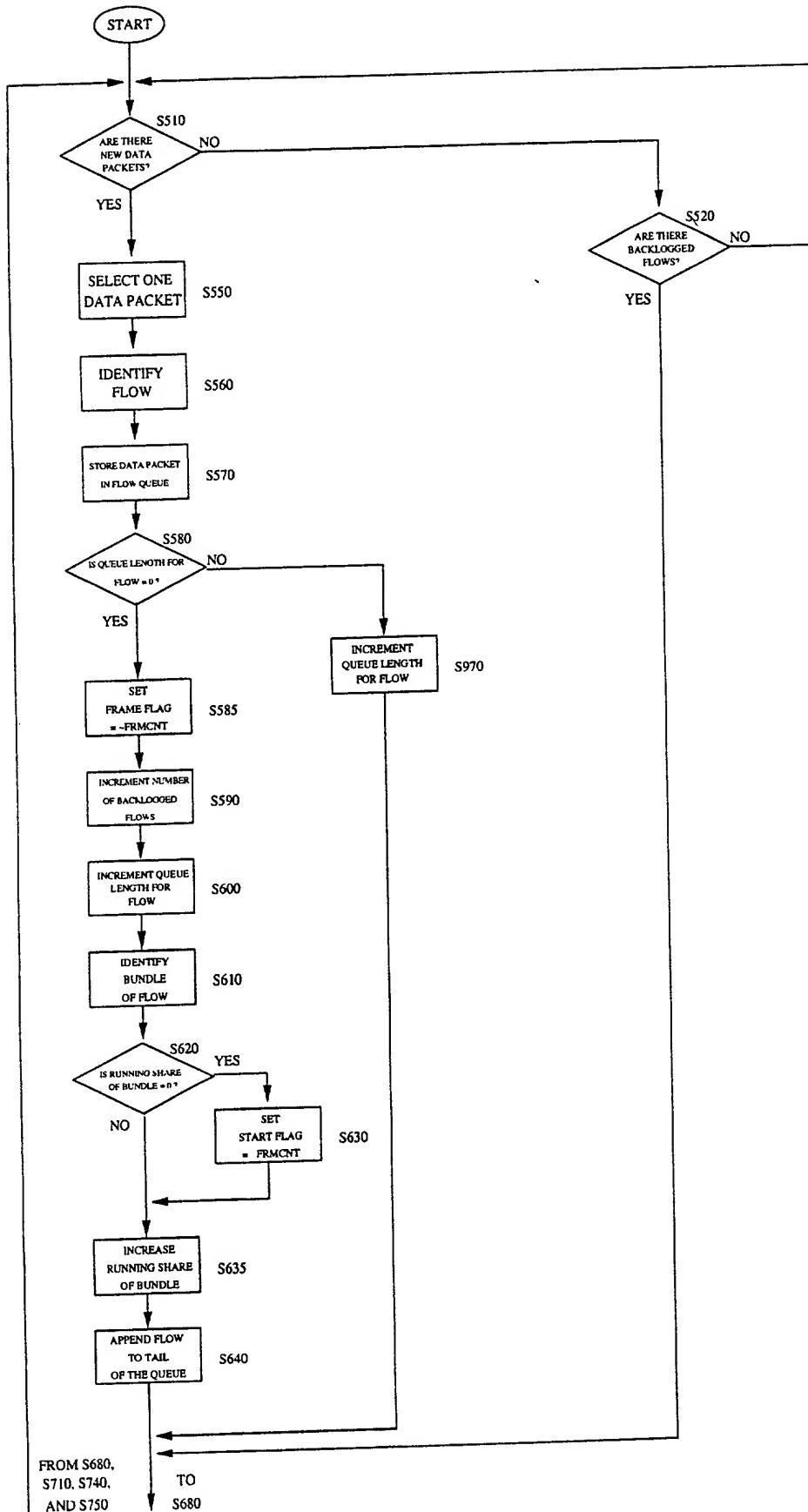


Fig. 7.A

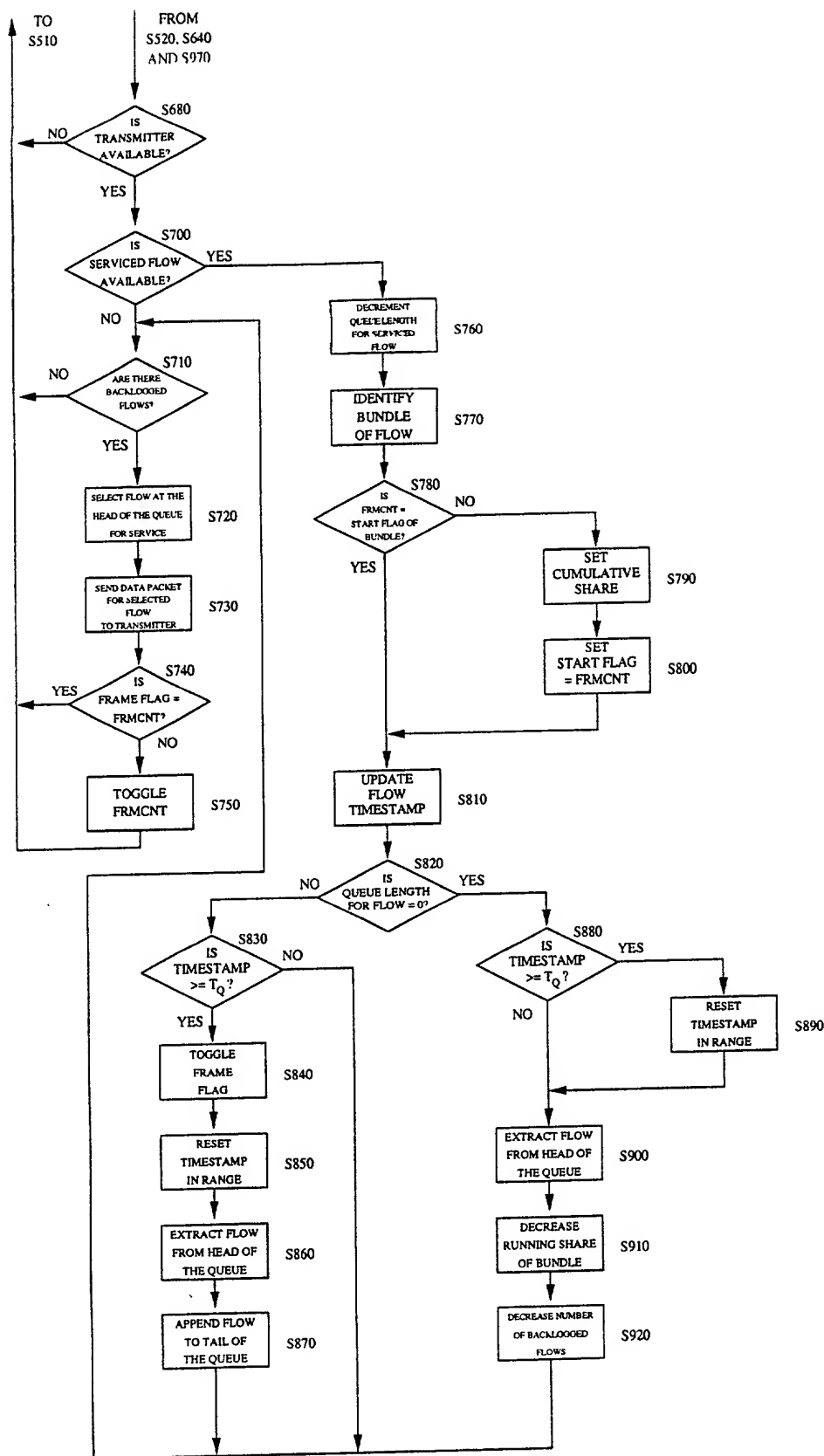


Fig. 7.B

Fig. 8

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1  Identify flow  $i$  currently at the head of the linked list
2  Identify bundle  $I$  of flow  $i$ 
3  if ( $FF_i \neq FRMCNT$ )
4       $FRMCNT \leftarrow \neg FRMCNT$ 
5  Prepare head-of-the-queue packet  $p_i^k$  for transmission
6  if ( $\sigma_I \neq FRMCNT$ )
7       $\Phi_I \leftarrow \phi_I$ 
8       $\sigma_I \leftarrow FRMCNT$ 
9       $F_i^k \leftarrow F_i^{k-1} + \frac{l_i^k}{R_I} \cdot \frac{\Phi_I}{\rho_i}$ 
10 if ( $F_i^k \geq T_Q$ ) /* Frame over for flow  $i$  */
11      $F_i^k \leftarrow F_i^k - T_Q$ 
12      $FF_i \leftarrow \neg FRMCNT$ 
13     Extract flow  $i$  from head of linked list
14     if (Flow  $i$  is still backlogged)
15         Append flow  $i$  to tail of linked list
16     else /* Flow  $i$  is getting idle */
17          $\phi_I \leftarrow \phi_I - \rho_i$ 
18     else if (Flow  $i$  is getting idle)
19         Extract flow  $i$  from head of linked list
20      $\phi_I \leftarrow \phi_I - \rho_i$ 

```